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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YUTAKA MACHIDA

Appeal 2008-2096
Application 09/050,808
Technology Center 2600

Decided: September 4, 2008

Before JOSEPH F. RUGGIERO, ROBERT E. NAPPI, and JOHN A. JEFFERY, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134 from the Examiner's rejection of claims 21 and 22. Claims 2, 7, and 12-20 have been indicated as containing allowable subject matter (Ans. 2), and claims 1, 3-6, and 8-11 have been cancelled (App. Br. 2). We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

STATEMENT OF THE CASE

Appellant invented a decoding method for a digital moving image signal. Specifically, the method (1) evaluates blocks within two successive frames; (2) identifies error in a block in one of those frames; and (3) uses a block in the other of those frames to decode a third block in a third successive frame.[1] Claim 21 is illustrative:

21. A method of decoding block N+1 in frame N+1 of successive frames of a predictively coded image signal, said method comprising the steps of:

a) evaluating block N of frame N and block N-M of frame N-M of said signal, wherein blocks N-M, N and N+1 are in corresponding locations of frames N-M, N and N+1, respectively, M=>1;

b) identifying an error in one of block N and block N-M;

c) using the other of block N and block N-M to decode block N+1.

The Examiner relies on the following prior art references to show unpatentability:

Igarashi	US 5,539,466	Jul. 23, 1996
Yamaguchi	US 5,737,022	Apr. 7, 1998

1. Claims 21 and 22 stand rejected under 35 U.S.C. § 112, ¶ 1, as failing to comply with the enablement requirement.
2. Claims 21 and 22 stand rejected under 35 U.S.C. § 112, ¶ 2, as being incomplete for omitting essential elements and steps.

[1] *See generally* Spec. 5:15-6:4; 11:23-13:21.

3. Claims 21 and 22 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Igarashi and Yamaguchi.

Rather than repeat the arguments of Appellant or the Examiner, we refer to the Briefs and the Answer[2] for their respective details. In this decision, we have considered only those arguments actually made by Appellant. Arguments which Appellant could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

FINDINGS OF FACT

The following findings of fact (FF) are supported by substantial evidence on the record before us:

1. The Specification indicates that the reconstruction images of "one frame before in time" and "two frames before in time" are stored in frame memories A and B respectively which are used to generate corresponding predicted images (Spec. 11:23-12:7). If a decoding error is contained in the predicted image A, then the selecting means 111 issues only the predicted image B. Similarly, if a decoding error is contained within predicted image B, it issues only the predicted image A (Spec. 12:8-19).

2. Igarashi discloses an apparatus for coding a moving picture that predicts motion prediction with less information. To this end, all blocks in a frame are divided into two fields and a coder can be switched every frame to generate block data based on these fields (Igarashi, Abstract).

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[2] We refer to (1) the Appeal Brief filed April 26, 2007; (2) the Examiner's Answer mailed August 23, 2007; and (3) the Reply Brief filed October 23, 2007 throughout this opinion.

3. In one implementation, motion prediction can be performed from former and later frames. A typical implementation is shown in Figure 6 which shows a former frame, a current frame, and a later frame, a motion vector, and a macro block (MB) (Igarashi, col. 31, ll. 12-22; Fig. 6).

4. In motion prediction of P and B frames, motion prediction occurs in the former and later frames with respect to the odd and even fields of the macro block (Igarashi, col. 31, ll. 22-33; Fig. 7).

5. Yamaguchi discloses a motion compensation prediction system that utilizes front and rear prediction and a motion vector. When a particular block (Block X) is made non-decodable, (1) candidates of respective motion compensation predictions are applied to pixel values in blocks adjacent to Block X (i.e., Blocks A-H); (2) an error value is calculated for each candidate; (3) motion compensation prediction with a minimum error value is selected from the candidates; and (4) motion compensation prediction is used with respect to Block X (Yamaguchi, col. 8, ll. 15-31).

PRINCIPLES OF LAW

"The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation." *United States v. Telectronics, Inc.*, 857 F.2d 778, 785 (Fed. Cir. 1988).

Claims must "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, ¶ 2. However, "[o]nly claims not amenable to construction or insolubly ambiguous are indefinite….A claim term is not indefinite just because it poses a difficult issue of claim construction." *Star Scientific, Inc. v. R.J.*

Reynolds Tobacco Co., No. 2007-1448 (Fed. Cir. Aug. 25, 2008), slip op. at 22 (internal citations and quotation marks omitted).

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

If the Examiner's burden is met, the burden then shifts to the Appellant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

THE ENABLEMENT REJECTION

We first consider the Examiner's enablement rejection of claims 21 and 22 under § 112, first paragraph (Ans. 3). The Examiner takes the position that since (1) the term "N" is undefined, and (2) the term "M" can be any number greater than or equal to one, then the term "N-M" in claims 21 and 22 can be zero or a negative number. Such a result, the Examiner contends, would run afoul of the enablement requirement since negative number blocks and frames do not exist (Ans. 5-7).

Appellant argues that not only is there no requirement for the Specification to mention these terms specifically, ordinarily skilled artisans would, in any event, have no problem understanding the illustrations on Page 5 of the Brief if negative numbers were used (App. Br. 3-4; Reply Br. 1-2).

ISSUE

The issue before us, then, is whether Appellant has shown that the Examiner erred in finding that the disclosure fails to comply with the enablement requirement under § 112, first paragraph. The issue turns on whether one reasonably skilled in the art could make or use the invention from the present disclosure coupled with information known in the art without undue experimentation. For the following reasons, we find that Appellant has shown such error.

ANALYSIS

We agree with Appellant that ordinarily skilled artisans would reasonably understand the claimed invention in light of the disclosure and we therefore find the disclosure enabling. While the illustration on Page 5 of the Brief does not appear in the drawings of the present application, we nevertheless find that the Specification reasonably supports the recited decoding functionality of claims 21 and 22 which involves processing of blocks of information contained in frames having a relative position with respect to each other based on identification of error in a particular frame.

For example, the Specification indicates that the reconstruction images of "*one frame before in time*" and "*two frames before in time*" are stored in frame memories A and B respectively which are used to generate corresponding predicted images (Spec. 11:23-12:7; emphasis added) (FF 1). If a decoding error is contained in the predicted image A, then the selecting means 111 issues only the predicted image B. Similarly, if a decoding error is contained within predicted image B, it issues only the predicted image A

(Spec. 12:8-19) (FF 1). *See also* Spec. 13:8-21 (noting that the decoding method uses only the predicted image not containing decoding error to reconstruct the present processing pixel block). This description, in our view, reasonably conveys sufficient information to enable ordinarily skilled artisans to make and/or use the claimed invention.

That said, the Examiner is correct that since the value of N recited in the claims is undefined, and the claims require that M must be greater than or equal to one, then the resulting difference value of "N-M" can be zero (when N and M are the same value) or a negative number (when M is larger than N). But the variables N and M merely *identify* a particular frame (and associated block). In our view, this mere label hardly renders these frames/blocks non-existent as the Examiner asserts. In fact, as identifiers, the actual values of these numbers can be arbitrary so long as the frames (and their associated blocks) and their relative position with respect to each other can be reasonably ascertained.

Put another way, the fact that these identifiers may include zero or negative numbers is not problematic regarding enablement so long as ordinarily skilled artisans could reasonably identify the frames, their associated blocks, and their relative positions based on these identifiers. This identification function is amply met on the record before us—even with negative numbers. For example, the table below summarizes the resulting values of N-M, N, and N+1 for various exemplary values of N and M:

Frame/Block	**N=0 M=1**	**N=1 M=1**	**N=-1 M=1**	**N=0 M=2**	**N=1 M=2**	**N=-1 M=2**
N-M	-1	0	-2	-2	-1	-3
N	0	1	-1	0	1	-1
N+1	1	2	0	1	2	0

Table 1: Exemplary Frame/Block Values Resulting from Various Values of N and M.

As the table above illustrates, despite the existence of negative and null values, the *relative position* of frame/block values of N-M, N, and N+1 is nonetheless consistent for any of the exemplary values of N and M. As such, ordinarily skilled artisans would have little trouble ascertaining from this data the relative positions of each respective frame (and associated block) in claims 21 and 22. That a null or negative number is used to identify such a frame/block does not affect our conclusion. Indeed, as Appellant indicates, identifying frames with null values is well known in the art. *See* Evidence Appendix of the Brief (identifying a frame as "Frame 0"). We see no reason why negative values should be any less clear to ordinarily skilled artisans at least with respect to identification. Therefore, based on the record before us, we find the present disclosure enabling for the claimed invention.

For the foregoing reasons, Appellant has persuaded us of error in the Examiner's enablement rejection of claims 21 and 22. Accordingly, we will not sustain that rejection.

THE REJECTION BASED ON 35 U.S.C. 112, SECOND PARAGRAPH

For the reasons indicated above with respect to the enablement rejection, we will also not sustain the Examiner's rejection of claims 21 and 22 based on 35 U.S.C. 112, second paragraph. As we indicated above, we disagree with the Examiner that the claims ostensibly omit the "essential element" that N must be greater than or equal to 2 (Ans. 4), since ordinarily skilled artisans could reasonably ascertain the claimed invention at values of N less than two.

For the foregoing reasons, Appellant has persuaded us of error in the Examiner's rejection of claims 21 and 22 based on 35 U.S.C. 112, second paragraph. Accordingly, we will not sustain that rejection.

THE OBVIOUSNESS REJECTION

We now consider the Examiner's obviousness rejection of claims 21 and 22 over Igarashi and Yamaguchi (Ans. 4-5). Appellant argues that the prior art fails to disclose error correction occurring across different frames as claimed. According to Appellant, error correction in Yamaguchi is based on the contents of an adjacent block, but does not correct an error based on blocks in different frames (App. Br. 5-6; Reply Br. 2-3).

The Examiner relies on Figure 6 of Igarashi as teaching an evaluation among successive frames (i.e., the "former frame," the "current frame," and the "later frame") where each frame has a corresponding macroblock in corresponding locations within each frame. The Examiner further notes that Yamaguchi teaches that any frame can have errors (i.e., a non-decodable block) and thus teaches error correction in different frames (Ans. 8-9).

The issue before us, then, is whether Appellant has shown that the Examiner erred in finding that the collective teachings of Igarashi and Yamaguchi teach or suggest the claimed invention. The issue turns on whether the cited prior art teaches or suggests a decoding method that (1) evaluates blocks within two successive frames, (2) identifies error in a block in one of those frames, and (3) uses a block in the other of those frames to decode a third block in a third successive frame as claimed. For the following reasons, we find that Appellant has shown such error.

Based on the functionality of Igarashi and Yamaguchi as noted in the Findings of Fact section above, we do not find the collective teachings of these references reasonably suggest a decoding method that (1) evaluates blocks within two successive frames, (2) identifies error in a block in *one* of those frames, and (3) uses a block in *the other* of those frames to decode a third block in a third successive frame as claimed.

While Figures 6 and 7 of Igarashi do show three successive frames with the location of a macro block (MB) identified with respect to each frame in a motion prediction system (FF 3-4), we still fail to see how applying the teaching of Yamaguchi cures the noted deficiency of Igarashi, namely steps (2) and (3) above.

As shown in Figure 8A, Yamaguchi identifies a block in a frame that is non-decodable (i.e., Block X) and applies motion compensation predictions to pixel values in the adjacent blocks (Blocks A-H) (FF 5). These adjacent blocks, however, are in the same frame. But even if we assume, without deciding, that this error identification (i.e., identifying a non-decodable block) can occur in different frames as the Examiner suggests, we find nothing on this record reasonably suggesting that once

such an error is identified in one frame, *the other frame* (and corresponding block) is used for decoding as claimed.

For the foregoing reasons, Appellant has persuaded us of error in the Examiner's rejection of claims 21 and 22. Therefore, we will not sustain the Examiner's rejection of those claims.

CONCLUSION OF LAW

Appellant has shown that the Examiner erred in rejecting claims 21 and 22 under §§ 112 and 103.

DECISION

We have not sustained the Examiner's rejections with respect to all claims on appeal. Therefore, the Examiner's decision rejecting claims 21 and 22 is reversed.

REVERSED

gvw

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